Digitalization and e-services in the Russian Federation: problems and ways to improve

Ekaterina Eremeeva and Ruslan Sadyrtdinov

1 Kazan Federal University, 420018 Kremlevskaya str. 18, Russia

Abstract. The digitalization of the public administration system includes many elements, including the construction of convenient and popular channels for interaction between public authorities and the population. One of these is the provision of state and municipal services in electronic form. At the same time, the analysis of scientific literature indicates that one of the key issues is the willingness of citizens (especially certain categories) to use digital technologies. In this regard, within the framework of this work, the issues of providing citizens of Russia with state and municipal services in electronic form were considered. Particular attention was paid to the level of satisfaction of citizens with this format of interaction. Problems causing difficulties in using or abandoning digital cooperation in favor of the traditional channel of direct personal communication with public authorities were also considered. As part of the study, a comparative analysis of individual indicators of the use of electronic state and municipal services in dynamics for 2017-2021 is carried out in Russia as a whole, as well as in its individual regions. In addition, Russia was compared with the countries of Europe on a number of indicators. This technique allowed us to describe and evaluate the development of electronic state and municipal services in the Russian Federation and its individual territories in more detail. The results obtained led to the conclusion that the electronic format of interaction between the population and public authorities in the Russian Federation is becoming increasingly relevant.

1 Introduction

It is impossible to imagine a modern system of state and municipal government without the use of digital and information and communication technologies (ICT). It can be noted that, on the one hand, interest in the digitalization of public administration was caused by the coronavirus pandemic [1]. On the other hand, the digitalization of society, the economy, and, in particular, state and municipal government has been discussed for quite a long time [2].

The digitalization of the public administration system includes many elements: the general concept of digitalization of various bodies and departments [3], the formation of a system of interdepartmental interaction with electronic document management and data...
exchange [4], the introduction of “end-to-end” technologies [5], including artificial intelligence [6]. An important aspect of the modern digitalization process is building a convenient interaction between public authorities and the population. One of the basic mechanisms reflecting this interaction is the provision of state and municipal services in electronic form. At the same time, as studies show [7, 8], one of the key issues in studying the interaction between the population and public authorities is the readiness of citizens (especially certain categories) to use digital technologies. As the practice of such countries as Spain [9], Denmark [10], Italy [11] shows, the unwillingness or unwillingness of certain categories of citizens to use digital technologies rises the problems of digital inequality in society [12] and additional costs for the state [13].

In this regard, within the framework of this work, the issue of providing citizens of Russia with state and municipal services in electronic form was considered in order to identify certain problems in their provision and suggest potential ways to overcome them and improve the quality and convenience of the digital format of interaction between public authorities and the population in the Russian Federation.

2 Method

To achieve this goal, an analysis of statistical data on the provision of electronic state and municipal services in the Russian Federation in dynamics for the period 2017-2021 was made. As part of the work, many different indicators were considered, which made it possible to study in more detail the interaction between the population and public authorities in the provision of electronic services in the Russian Federation. The main attention was paid to indicators reflecting the difficulties of the population in obtaining state and municipal services in electronic form, as well as information about the reasons for citizens’ refusal to receive state and municipal services in this form.

To obtain more objective conclusions based on the results of a comparative analysis, the study used relative indicators that reflect the percentage of individual values calculated by the formula 1:

\[
D_i = \frac{Q_i}{\sum_{i=1}^{n} Q_i} \times 100\%
\]  

(1)

where \(Q_i\) is the absolute value of the \(i\)-th indicator, \(n\) is the total number of values of the indicator \(Q\), \(D_i\) is the share of the \(i\)-th indicator in the total sum of the values of the indicator \(Q\).

The main source of data was the information presented in the annual sample statistical survey on the use of information technologies and information and telecommunication networks by the population, conducted by the Federal State Statistics Service of the Russian Federation [14], the information presented in the HSE study “Indicators of the Digital Economy” [15] and “Digital Economy: A Brief Statistical Collection” [16].

For a deeper study of the process of providing electronic state and municipal services to citizens of the Russian Federation, individual indicators were considered relative to the regions of the Russian Federation. For comparative analysis, such regions of Russia as the republics of Tatarstan, Bashkortostan, Mordovia, Mari El and the Udmurt Republic were selected. These regions have a similar geographical location, the same administrative status of national-state regions - republics, but differ significantly from each other in terms of socio-economic development, which may affect the level of digitalization and the development of the information society on their territory. In this regard, the process of providing state and municipal services in electronic form in these regions of the Russian
Federation may vary. This makes it relevant to study the practice of not only the Russian Federation, but also its individual territories.

In addition, a comparative analysis of the situation in the Russian Federation and other countries was carried out for a number of indicators under consideration. This made it possible to determine the similarities / differences between the practice of the Russian Federation and other countries in matters related to electronic state and municipal services.

3 Results and discussion

The analysis of statistical data on the provision of state and municipal services in electronic form in the Russian Federation led to the following conclusions.

Initially, it should be noted that the share of the population that uses the electronic format for receiving services when interacting with the state is growing: from 77.6% of the total number of citizens who received state and municipal services in 2019, to 85.1% in 2021, or from 57.5% of the total number of Russian citizens aged 15 to 72 in 2019 to 68.2% in 2021.

Comparison of this indicator for selected regions of the Russian Federation shows a different picture: there is a significant scatter (see Fig. 1).

**Fig. 1.** Share of citizens who received electronic state and municipal services out of the total number of citizens who received state and municipal services, %

Figure 1 clearly demonstrates that in the three regions of the Russian Federation the proportion of the population that received state and municipal services in electronic form is higher than in the country as a whole. Whereas in the other two - the Republic of Mari El and the Udmurt Republic, this indicator is lower than in Russia as a whole and in the other studied regions of the Russian Federation.

Another fact that should be noted is the lack of a single trend of increasing the relevance of electronic state and municipal services among the population of certain regions of the Russian Federation (see Fig. 2).
Fig. 2. Appeal of the population of the Russian Federation and individual regions of the Russian Federation to electronic state and municipal services, % of the total number of citizens who applied to public authorities to receive services

Figure 2 shows that, in general, in the Russian Federation, there is an increase in the number of people turning to electronic services of public authorities, while in certain regions of the Russian Federation (the Republic of Bashkortostan, Mari El, the Udmurt Republic), the share of public and municipal services turning to this format is sometimes growing faster, sometimes at a slower pace, or even declining. This is probably due to the presence of factors that prevent a steady increase in the proportion of citizens choosing the electronic format for receiving state and municipal services. In this regard, it is further relevant to consider the issue of the satisfaction level of citizens with the quality of electronic state and municipal services.

As it is evidenced by the data obtained during the annual monitoring of Rosstat [14], the satisfaction of the population with the quality of state and municipal services provided in electronic form, from 2017 to 2021, remained about the same. About a quarter of the respondents (approximately 27%) annually remain only partially satisfied with the quality of state and municipal services. If we consider similar data for selected regions of the Russian Federation, it turns out that in 2021 only in the Republic of Tatarstan the share of citizens who are completely satisfied with the quality of electronic services is higher than in the whole of the Russian Federation. In other studied regions of Russia, it is lower, while the share of partially satisfied citizens (on average, about a third of the respondents) is more significant compared to the Russian Federation, and in the Republic of Mari El, there is also the share of citizens who are completely dissatisfied with the quality of electronic public services. This factor confirms the hypothesis that there are problems that hinder the process of obtaining state and municipal services in electronic form. At the same time, they need to be explored and overcome not only with the help of general federal measures, but also with individual regional events developed taking into account the specifics and level of digitalization in each subject of the Russian Federation.

In this regard, we further turned to the consideration of the difficulties that citizens of the Russian Federation face when receiving state and municipal services in electronic form. The most significant of them are shown in Table 1 [14].
Table 1. Difficulties in obtaining state and municipal services by citizens of the Russian Federation in electronic form.

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of population receiving services electronically and experiencing difficulties</td>
<td>27.9</td>
<td>24.9</td>
<td>25.9</td>
<td>34.8</td>
<td>34.7</td>
</tr>
<tr>
<td>Technical failures</td>
<td>18.1</td>
<td>17.6</td>
<td>18.3</td>
<td>27.6</td>
<td>21.5</td>
</tr>
<tr>
<td>Insufficient, unclear or outdated information</td>
<td>8.8</td>
<td>6.3</td>
<td>7.0</td>
<td>7.3</td>
<td>7.9</td>
</tr>
<tr>
<td>Lack of necessary support, if there are questions</td>
<td>3.6</td>
<td>2.9</td>
<td>2.9</td>
<td>3.2</td>
<td>3.2</td>
</tr>
</tbody>
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In Table 1, it can be seen that a third of the recipients encountered various difficulties. This approximately corresponds to the total share of those who are partially satisfied or completely dissatisfied with the quality of state and municipal services in electronic form. This fact also confirms the hypothesis that problems in obtaining electronic services do affect their relevance to the population.

In addition to the fact that in dynamics these problems persist, and some of them are intensifying, which is noted in Table 1, a fairly significant differentiation of the regions of the Russian Federation can be seen in these problems [14] (see Table 2).


<table>
<thead>
<tr>
<th>Republic of Bashkortostan</th>
<th>Mari El Republic</th>
<th>The Republic of Mordovia</th>
<th>Republic of Tatarstan</th>
<th>Udmurt Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of population receiving services electronically and experiencing difficulties</td>
<td>35.7</td>
<td>30.7</td>
<td>37.8</td>
<td>19.7</td>
</tr>
<tr>
<td>Technical failures</td>
<td>25.1</td>
<td>21.3</td>
<td>29.3</td>
<td>14.6</td>
</tr>
<tr>
<td>Insufficient, unclear or outdated information</td>
<td>13.2</td>
<td>15.3</td>
<td>15.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Lack of necessary support, if there are questions</td>
<td>4.4</td>
<td>8.6</td>
<td>7.7</td>
<td>1.7</td>
</tr>
</tbody>
</table>

The information from Table 2 shows that for all the regions under consideration, just like for the Russian Federation as a whole, technical failures still remain the key problem. However, the degree of relevance of this problem for the population of the regions is very different. If in Tatarstan only 14.6% of users of electronic state and municipal services faced this problem, then in the Republic of Mordovia - 29.3%, that is, 2 times more.

This kind of situation is already creating the problem of digital inequality in the Russian Federation, which in the future may have a significant impact on the socio-economic condition of individual subjects of the country. In addition to the problem of digital inequality within the Russian Federation, the considered difficulties and a number of other reasons lead to the refusal to receive electronic state and municipal services. Among the reasons for the refusal of citizens from the electronic format of interaction with public authorities, the following can be distinguished (see Fig. 3.)
Fig. 3. Key reasons for the refusal of citizens of the Russian Federation to receive state and municipal services in electronic form

Based on the data in the Figure 3 [15, 16], the main reason for refusal (despite the decrease) remains the preference for a personal visit. That is, a separate group of the population does not yet see and does not feel the advantages of the electronic format of interaction with the state, or does not know about them. In this situation, the issue of informing the population about the advantages of digital technologies is important [17]. In this regard, we consider it promising to use information and consulting measures, including social advertising, within the framework of the state digitalization policy. They can help raise citizens' awareness of the benefits of electronic state and municipal services.

The second thing that can be noted among the reasons for refusal is the problem of digital skills of the population. Citizens of the Russian Federation are unsure of their ability to work in a digital environment. If we evaluate the digital skills of the Russian population as a whole, then it can be noted that so far the level of their development is relatively low, including in comparison with other European countries (see Table 3).

Table 3. The level of ownership of digital data by the population of the Russian Federation and European countries, as of 2021.
Using the data presented in Table 3, we can conclude that even the skills of working with text editors remain unexplored for many Russians. Citizens themselves, according to Rosstat [14], also rate their level of digital skills relatively low. At the same time, if we consider the dynamics, it can be noted that in addition to a slight increase in those whose skills are well developed, the proportion of those whose digital skills are poorly developed is increasing, and at a faster pace.

The possession of digital skills also varies significantly by age [15]. Even the assessment of their own digital skills by respondents aged 25 to 31 is already significantly lower than that of the population under 25. This suggests that digital skills are changing very quickly, becoming more complex. And in these conditions, even the younger generation does not always have time to update them in order to feel comfortable using digital technologies, including when receiving state and municipal services. In the context of regions, the differentiation of the skills of the population also turns out to be very significant, which becomes another prerequisite for the formation of a digital divide in the Russian Federation [18].

In addition to problems, a positive trend can also be noted: every year the proportion of respondents who refuse electronic state and municipal services due to the need for a personal visit is gradually decreasing. This suggests that systematic work is underway in the Russian Federation to digitalize public administration, due to which an increasing number of services from different departments at different levels of public administration are becoming available electronically for citizens of the Russian Federation.

4 Conclusion

Based on the results of research and the practice of providing state and municipal services in electronic form in the Russian Federation, we were able to draw the following conclusions. In the context of digitalization, the relevance of the electronic format for the provision of state and municipal services in the Russian Federation is really increasing. However, it is important to note that so far the relevance of this format of interaction differs in different regions of Russia in the same way as the level of satisfaction of the population with the quality of electronic services.

One of the reasons for this may be the difficulties that citizens face when receiving electronic state and municipal services. Technical failures remain the key among them. Firstly, this indicates the need for further improvement of the digital technologies themselves used in the Russian Federation. Secondly, due to the fact that the relevance of this difficulty in different regions of Russia is different, the problem of digital inequality arises in the Russian Federation, which may in the future affect the socio-economic state of the territories and requires its resolution.

Another factor hindering the development of electronic state and municipal services is the rejection of such a remote format of interaction between citizens and public authorities. Important to overcome this problem are information and advisory measures that would draw attention to the electronic format of state and municipal services. But more promising and expedient, from our point of view, is the development of digital skills of the population of the Russian Federation. So far, according to this indicator, our country is significantly inferior to European countries. The Russians themselves do not rate their digital skills as highly, which causes uncertainty and unwillingness to use the digital environment to interact with public authorities. In addition, the level of digital skills varies among the population of different regions. This also becomes a prerequisite for the digital divide in the Russian Federation and makes it relevant to develop their own regional digitalization measures in each subject of the Russian Federation.
Thus, many problems of digitalization of public administration in the Russian Federation and the provision of electronic public and municipal services remain unresolved. Moreover, the most significant among them, in our opinion, are still problems related to the digital culture of society itself: its interest in a new format of interaction, the availability of relevant skills, satisfaction and convenience of obtaining state and municipal services in electronic form. In our opinion, the development of the digital culture of the population of the Russian Federation will allow in the future not only to switch to digital technologies in the public administration system, but also to make their use truly focused on society and its needs.

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